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Chronic Headache: Neurological Advances regarding its Diagnosis and Treatment

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I. 1. The imprecision of the text books.
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III. 1. The bearing of the above considerations on treatment.

Those who, in conducting original investigations, have occasion to consult textbooks and so-called authorities have been much struck by the manner in which unblushing copying goes on, year after year. An alleged fact, an exploded notion, a demolished theory, continues its pernicious course in edition after edition after it has been "scotched" and killed by the accurate research and clear conceptions of physiology. The discouragement from this cause to the thoughtful and careful student is incalculable. Sir Thomas Fraser used to say

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that it needed twenty years to catch a text-book lie. Thus on account of the enormous mass and unconnected and irrevelant details which more often than not conflict with experience, the physician who consults a text-book when he is puzzled by a case of chronic or recurrent headache, has recourse to a purely empirical manner of treatment.

Very often in a case of chronic or recurrent headache, the physician, if a dose of calomel fails, begins by giving analgesics before making a diagnosis. If the headache is a metabolic, the relief obtained is only momentary, and the patient's last stage is worse than the first, for the coal tars seriously interfere with nutrition, and thus add to the burden already borne by the patient's organs. This empirical hit or miss therapy is very injurious to the doctor's respect, as failure after failure accumulates. In time he also loses the respect of his patient, as to his ability at least, and the whole situation becomes impossible. The case is labeled functional, neurasthenic, neurotic, hysteric, or whatever name it happens to be fashionable to apply to what is not understood. As a matter of fact, the headache of nervous origin should be quite easy to distinguish from the functional headache due to disorder of the body. The cause of the latter may sometimes escape us and its treatment may fail, but it is none the less physical.

In our student days it was the fashion to laugh at the pathological knowledge of our forebears, the humeralists. But modern

study of the blood has changed this attitude, and we now know there is entering a humeral pathology which is becoming more precise daily.

The class relationship, for instance, of the epileptic diathesis to the other aenuias is an acquired clinical fact which has been ascertained by experiment on animals also. Moreover, even the cellular elements change their proportions in this condition.

Now it is becoming increasingly evident that there is a very close relationship between epilepsy and migraine; and not only that, but that there is no real distinction between the pathogenesis of a definite hemicrania with the classical onset of nausea and vomiting, and perhaps the even commoner occasional headaches not entirely lateral in distribution, and only occasionally accompanied by definite digestive crises. Moreover, the same kind of treatment is efficacious in each of these conditions. So much so, that Charles Mercier states after ten years' experience in the Charing Cross Psychopathic Dispensary, that he can cure *any* case of chronic headache which is not due to organic new formation. While not so sweeping, my own opinion has long had the same turn. I have found chronic headache of metabolic type most amenable, just as Spratling has found many types of epilepsy to be by no means the hopeless matter it is casually supposed.

In treatment, however, one must have the clear knowledge of the nutrimental processes and their disorders, and one must

understand the relationship of the diet to these. Moreover, one must take into account the relationship of muscular and mental exertions and their adjustments to assimilation; and again the psychic factor in nutrition must be regulated. So that the management of a case of chronic headache cannot be learned in a day, or without much reflection.

Not only so, but this type of headache can be foreseen and its occurrence obviated. True, a minute study of the psychical symptoms is needed, which often precede its appearance even for one or two days. I have earlier alluded to the research of Mirto (1) in this direction. Two types of the reaction occur—one a depressive, the other expansive. In the former, a dull thick feeling in the head occurs, generally in the morning. The patient may be irascible; he may feel everything at sixes and sevens, and himself incapable of adjustment. A transition to the expansive state consists of a savage manner, shown by a feeling of intolerance and energy. On the other hand, the patient may feel unusually clear mentally and capable of the very finest work. He may have a desire to relate humorous experiences, to sing, to go out and spend money, etc. Some one, or more of these symptoms is the invariable percursor of a paroxysm of headache in quite a number of cases.

Experimental proof is perhaps lacking, and even laboratory observations are perhaps insufficient to establish the direct relationship of the chronic intrseications

which often cause headache, and a condition which often follows these; namely, *Le Petite Brightisme* of the French writers(2). It is pretty clear that the latter, however, eventuates into interstitial or diffuse nephritis, and clinical evidence points strongly to the direct sequence of the three conditions, headache—causing toxæmia—*Petite Brightisme*, and chronic nephritis. Moreover, the same type of treatment, while it benefits the terminal conditions, will usually remove the second, and is practically always successful in curing the first.

I need not discuss the symptoms and signs of the latter condition, but I wish to emphasize the blood pressure index of the toxic state. Its measurement should never be omitted in any case suspected of metabolic disorders, and as at least 80 per cent. of headaches are metabolic, it would be a safe rule to measure the blood pressure of every patient with chronic headache.

The Chronic Meningeal Irritations.—*Meningisme*(3) has become a definite clinical and pathological condition. It is usually the cause of the so-called nervous symptoms of exanthemata. The meningeal serosa reacts to the noxa as does the skin. Headache is usually the earliest symptom of the meningeal implication, although when the process happens to preponderate locally, a squint or a vocal epilepsy may indicate implication of the cranial nerves or cortex, respectively. Even in these cases, however, nothing may be observed with the naked eye post mortem, but under the microscope vascular hyperæmia, œdema, or cel-

lular exudation are seen. But we do not need to wait for the death of the patient in order to be pathologically certain, for diapedesis occurs in the arachnoid sac; so that by withdrawing the cerebrospinal fluid through a lumbar puncture, we can ascertain, by counting the cells, that we have to do with an irritation of meninges. The headache is probably due to the increased tension caused by the inflammatory exudation from the meninges.

I have drawn this picture in order to illustrate the mechanism of the headache in the chronic infection of syphilis. The pain in this disease has the same pathogenesis as in that of the more acute infections. Even in the secondary period there is an abundant pouring out of the fluid and small round cells, and a tumefaction of the meninges,(4) and it is quite possible that the meningitdes of the tertiary period are direct sequalæ of this. A few years will settle this, for in very few cases has a series of presymptomatic subarachnoid explorations been made(5). It is certain, however, that a severe chronic meningitis long precedes the clinical manifestation of tertiary syphilis of the nervous system(6). The prophylactic significance of this is quite important, for with the Wasserman test and lumbar puncture, we are now able to anticipate tabes dorsalis and paresis by long periods. The therapeutic power thus given us is illustrated by two cases, too long to cite here, earlier reported(7). It is true that the diagnosis in these cases did not depend upon the Wasserman test or lumbar puncture,

and this brings me to another most important consideration.

Preeision in Neurological Diagnosis.—In the first of these cases the diagnosis was determined, primarily, by a modification of the sensibility of radicular distribution which needs for its determination a most careful neurological technique in order to avoid the sources of error inherent in exploring the sensations. The problem was to find the cause of a general infirmness and disability, headache, which had occurred without apparent cause, and was of irritative character not usual in merely metabolic cephalgiæ. The diagnosis was made even more precise by psychological examination.

In the second case psychometry was the means used for the diagnosis.

Now a neurological examination means a careful comparison of the motor functions on each side of the body by a series of test movements which clinical experience has shown to be the most convenient. It requires a careful estimation of the sensory acuteness of the patient, who must be placed in condition of position, temperature, and psychic relationship favorable to the functioning of his perceptions. The function of equilibration must be investigated by a series of tests with which recent work has furnished us(8). The various reflexes and the delicate *nuances* they reveal require particular attention. All these visible somatic reactions require for their appreciation a technical training just as arduous as that of the surgeon or bacteriologist. A neo-

phyte can no more be trusted to form an opinion about an abnormal sensation movement or reflex than can a beginner be trusted with the Wassermann reaction.

But the psychological examination is even more difficult. The sources of error are innumerable, and only the most rigid attention to detail and critical care can prevent gross mistakes. In this field much remains to be done, and even specialists strongly feel their own imperfections in this branch of clinical investigation.

The affection in which the application of this lesson is most striking is intracranial neoplasm. It can be safely postulated that any case of chronic headache which resists general regulation of the metabolic activity where the blood pressure is not markedly increased and which does not appear to be syphilitic should be submitted at the earliest possible moment to a thorough neurological examination, including minute investigation of the psychic functions, long before papill-œdema or the inroad of new growth in the cranium can cause a modification in the functions of some center or tract. This can be ascertained by one of the number of tests the neurologist employs, even at a time when it has not yet caused the patient any inconvenience aside from the headache, and is not apparent to a cursory examination. The tremendous importance of early diagnosis of these cases is becoming more and more apparent through the advance of cranial surgery. The decompressive operation in particular in even the gravest case may so alleviate pressure as to maintain life

and preserve the sight until at a later date radical extirpation of a growth becomes possible(9).

The term nervous headache should be applied only to one of psychogenetic mechanism; that is to say, one coming on in consequence of a mental or psychological cause. Moreover, a fertile source of error here lies in the imprecision of the patient's descriptions, and the name headache is often carelessly applied by a doctor who has not analyzed the patient's account or cross-examined him as to his sensations.

The so-called headaches typical of the psycasthenic state, for instance, are much more in the nature of a discomfort and annoyance than of an actual pain(10). Sensations of heat, cold, dragging, swelling to the point of bursting, twitching, gnawing, weight, or emptiness, are frequent. The localization of these sensations has not the least importance. An interpretation of each sensation has been sought in the visceral sensations which it is supposed every organ communicates, the brain included(11). The function is known as cenesthesis, but it is difficult to demonstrate this. It is pretty sure that actual pain is meningeal in origin, and that it is due to tension of the cerebrospinal fluid, and that it is a purely physical modification) although the circulatory changes which may, at least, aggravate any perturbations in intercephalic tension, can arise psychically; that is, by mental impressions or emotions. There is no direct evidence, but may there not be a blush of the brain? It is quite certain, clinically,

that some cases of headache are immediately provoked by painful emotion.

One must be careful to distinguish that which is a real physical change of state from the purely imaginary suffering of the true hysteric, who, from the intensity of her idea of pain, actually persuades herself that she is suffering pain; which is not the case, except in so far as her power of representation creates the delusion. This type of case which, as regards headache, is rare, must be distinguished from the affectation of pain in which even the patient does not really believe, but which is assumed to excite commiseration. The word topoalgia has been applied to the non-simulating type(12).

The apparent hyperalgesia of the painful regions is apt to cause confusion with a neuralgia, but in the latter the distribution conforms to that of a peripheral nerve, while the topoalgic area is that of a region; and, moreover, is sometimes variable. It may be constant, or it may occur in crises, lasting hours or days. Careful anmanesis will nearly always detect in these cases certain phobias, and a history of intellectual ruminations, tics, or besetments. The technique in eliciting the obsessive psychosis is too long to insist upon here. It needs to be carefully distinguished from hysteria,(13) as well as from the organic states which the practitioner first thinks of when bodily functions are the subject of the patient's prepossessions.

I say nothing of the headache of ocular strain or of that due to referred pain, for

~~they are~~ by this time well known, I imagine, to every physician, and there has been, indeed, a tendency to exaggerate its importance. The latter is comparatively uncommon, and even when chronic, occurs only occasionally in exacerbations.

We have now considered the common forms of chronic headache, and we have found much new light from humeral pathology, neurological cytology, microscopical anatomy, the work of surgeons on the cerebrum, and finally psychological analysis of the subjective symptoms.

The therapeutic bearing of what I have said has been indicated, *en passant*. Its chief lesson is the enormous importance of a clear diagnosis, from which follows the only scientific and rational indications for treatment; and it is only in this way that any considerable measure of success can be attained in curing cases of chronic headache. I cannot pretend, in a short paper, to even summarize the treatment of the pathological conditions and various data derived from considerations of chemical pathology, pharmaco-dynamics, surgery, and psychiatry, but I shall have attained my object in reading this paper before you if I convince you that in the great majority of cases of chronic headache there is a way out, and that we have the power to find that way; that we need no longer search the road by trying, as we reach it, each opening in the maze until we either find the right one or the patient passes out of our hands, and moreover, that we have now more certain procedures of which to avail ourselves

if we only choose to use the methods now placed in our hands by neurological diagnosis.

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